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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/549,620	04/14/2000	Anoop Kumar Mathur	H16-26292	9366

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EXAMINER

HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 07/24/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/549,620

Applicant(s)

MATHUR ET AL.

Examiner

Joseph P. Hirl

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-18 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-28 and 33-36 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-18, 20-24, 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This Office Action is in response to a Request for Continued Examination (RCE) entered June 16, 2003 for the patent application 09/549,620 filed on April 14, 2000.
2. The prior office actions related to application 09/549,620 are fully incorporated into this Final Office Action by reference.
3. The claims and only the claims form the metes and bounds of the invention. The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.
4. **Applicant must confirm that claims 25-36 have been added.** The RCE of June 16, 2003 identifies new claims 25-36 on pages 9-11. However, on page 12, lines 3-4, under Remarks, only claims up to 28 "are now pending in this application." In the spirit of compact prosecution, the Examiner has proceeded assuming that all of the new claims are to be considered. However, the applicant must confirm this assumption.

Status of Claims

5. Claims 6, 9, 11, 12, 15, 20, 22 and 24 are amended. Claims 8 and 19 are cancelled. Claims 25-36 are new. Claims 1-7, 9-18 and 20-36 are pending.

Allowance

6. Claims 25-28 and 33-36 are allowed.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 29-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The practical application test requires that a useful, concrete and tangible result be accomplished. Claims 29-32 represent abstract methodology and therefore are intangible. The consequence is non-statutory.

Response to Arguments

9. Applicant's arguments filed on June 16, 2003 related to Claims 1-7, 9-18 and 20-24 has been fully considered but are not persuasive.

In reference to Applicant's argument:

Claim 1 recites "annotating one or more actions in the production recipe with a desired intention for the action." (emphasis added). In the "Response to Arguments" section, the Office Action cited a number of

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different citations within the specification that describes different embodiments of annotations. Further, the Office Action indicated that

To one of ordinary skill in the art and using a broad view of annotation, each agent in a multiple agent architecture is annotated in a manner that satisfies the above description such that and in a dynamic sense, in the prior art of Kohn, adjusts in an intelligent manner in real time to a nonlinear process. Kohn, with intelligent agents, has annotated fully the production recipe (Kohn, col. 1, lines 9-15). Without such annotation (intention of operation), Kohn's Invention could not function. Office Action at para16.

Applicant respectfully traverses this assertion. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP 2131. The Office Action indicates that the system in Kohn "could not function" without an annotation related to "intention of operation." The citations within Kohn provided by the Office Action do not disclose annotating a recipe with "a desired intention for action." The system in Kohn includes components "whose logical (set-based) and evolution (continuum-based) behaviors are controlled by a collection of agents." Kohn at column 1, lines 11-15. One agent in the system of Kohn is illustrated in Figure 2. As described, "[a] single agent 20 consists of six components: Knowledge-base Builder 22 (which supports manual input from users), Planner 24, Inferencer 26, Knowledge Base 28, Adapter 30, and Knowledge Decoder 32 (which supports automatic input from other agents)." Kohn at column 18, lines 43-47. Furthermore, "[t]he Planner 24 generates a statement representing the desired behavior of the system as an existentially quantified logic expression herein referred to as the behavior statement." Kohn at column 18, lines 57-59. Accordingly, while the Planner 24 generates a statement representing the desired behavior of the system, there is no disclosure by Kohn that the Planner 24 (or other component of one of the agents in the system of Kohn) regarding annotating an action for a recipe with an intention for such an action.

Examiner's response:

Para 2 above applies. Since there has been no amendments to Claim 1, prior office comments apply. The Examiner notes that the Applicant has acknowledged that "[t]he Planner 24 generates a statement representing the desired behavior of the system as an existentially quantified logic expression herein referred to as the behavior statement." From Merriam Webster's Collegiate Dictionary, 1998, "existentially" conveys the meaning of "having being in time and space." The "behavior statement" conveys a desired intention. Consequently, within the context of Para 2 above, one has annotating, one has actions, one has a production recipe and one has desired intention.

In reference to Applicant's argument:

Moreover, the Office Action seems to indicate that this limitation is inherent within Kohn, stating that the system in Kohn "could not function" without providing such an annotation. Office Action at para 6. Applicant respectfully traverses this assertion.

"The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d

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1955, 1957 (Fed. Cir. 1993)." (emphasis added) MPEP 2112. "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). (emphasis added). MPEP 2112.

The statement by the Office Action that the system in Kohn "could not function" without providing such an annotation is conclusory, absent of any reason for such a conclusion. Applicant, therefore, respectfully requests a citation within Kohn that expressly describes an annotation of an action for a recipe with a desired intention for the action or a basis in fact or technical reasoning to support the determination that such an annotation necessarily flows from the teaching of Kohn.

Examiner's response:

The Examiner, when appropriate, will provide to the Applicant an opinion for the sake of clarification that will convey the understanding of one of ordinary skill in the art and could very well be related to inherency. The immediate above "Examiner's response" applies to the Applicant's request for reference. The Examiner states that inherency is not synonymous with conclusory.

In reference to Applicant's argument:

With regard to claim 3, among the differences, claim 3 recites "generating through computer automated operations a recipe comprising a set of actions and the purpose of the underlying process." (emphasis added). In the "Response to Arguments" section, the Office Action indicated that "[o]ptimal performance (as recited for the system in Kohn) is equivalent to fully encapsulating the purpose of the underlying process." Office Action at para 6. Accordingly, the Office Action relies on inherency based on Kohn to anticipate this limitation, as no express disclosure of this limitation within Kohn is cited by the Office Action. Applicant respectfully traverses this assertion. In particular, Applicant respectfully traverses that it is NOT inherent that a control system (based on logical and evolution behaviors) that claims to desire "optimal performance" will necessarily include a recipe that comprises the purpose of the underlying process.

Applicant, therefore, respectfully requests a citation within Kohn that expressly describes a recipe that includes the purpose of the underlying process or a basis in fact or technical reasoning to support the determination that such an annotation necessarily flows from the teaching of Kohn.

Examiner's response:

Para 2 above applies. Since there was no amendments to Claim 3, the prior office actions apply. To one of ordinary skill in the art, Kohn anticipates the Applicants

invention. To one of ordinary skill in the art, it is recognized that technology builds on technology and any given piece of art, merely represents that which is new or noteworthy at that moment in time. Such new technology will indeed become the support (inherency) for yet another piece of art. "The Model Builder Realization 51 contains clauses that constitute a recipe for building a procedural model (automaton) for generating a variable instantiation and theorem proving." (Kohn, col 21, lines 39-42) appropriately applies.

In reference to Applicant's argument:

With regard to claim 6, Applicant has amended such claim to include the limitations of claim 8. Among the differences, claim 6, as amended, recites "modifying a recipe for a batch processing situation using the data stored in the knowledge repository wherein the recipe contains steps and purposes." (emphasis added). With regard to the underlined limitation, the Office Action rejected such limitation while rejecting claim 8. In particular, the "Response to Arguments" section, the Office Action alleges that "one cannot achieve optima performance without steps and purposes." Office Action at para 6. Accordingly, the Office Action relies on inherence based on Kohn to anticipate this limitation, as no express disclosure of this limitation (a recipe that contains purposes in addition to steps) within Kohn is cited by the Office Action. Applicant respectfully traverses this assertion. In particular, Applicant respectfully traverses that it is NOT inherent that a control system (based on logical and evolution behaviors) that claims to desire "optimal performance" will necessarily include a recipe that contains purposes.

Applicant, therefore, respectfully requests a citation within Kohn that expressly describes a recipe that includes purposes or a basis in fact or technical reasoning to support the determination that such an annotation necessarily flows from the teaching of Kohn.

Examiner's response:

Para 2 above applies. Since there was no amendments to Claim 6 and Claim 8 (merely the joining of the two claims together), the prior office actions apply. All of the above comments apply.

In reference to Applicant's argument:

With regard to claim 9, among the differences, claim 9, as amended, recites "a Structured Knowledge Repository to store and organize the knowledge, wherein the Structured Knowledge Repository organizes

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knowledge and provides links between specific pieces of information and the functional purposes to which the knowledge can be put." (emphasis added).

Examiner's response:

Para 2 above applies. Prior office actions apply. The prior art of Kohn applies (see Fig. 2 and col 19, lines 7-13).

In reference to Applicant's argument:

With regard to claim 23, among the differences, claim 23 recites "generating an advanced recipe comprising a set of actions and the purpose of the underlying process." (emphasis added).

In the "Response to Arguments" section, the Office Action indicated that "[t]o one of ordinary skill in the art, agents operating in an intelligent real-time control of distributed nonlinear processes will generate actions that have the purpose of achieving optimal performance (Kohn, col. 4, lines 57-67; col. 5, lines 1-3)." Office Action at para 6. Accordingly, the Office Action relies on inherency based on Kohn to anticipate this limitation, as no express disclosure of this limitation (a recipe that comprises the purpose of the underlying process) within Kohn is cited by the Office Action. Applicant respectfully traverses this assertion. In particular, Applicant respectfully traverses that it is NOT inherent that a control system (based on logical and evolution behaviors) that claims to desire "optimal performance" will necessarily include a recipe that comprises the purpose of the underlying process.

Examiner's response:

Para 2 above applies. Prior office actions apply. All of the above applies.

In reference to Applicant's argument:

As set forth in the prior response to the Office Action mailed on April 11, 2002, in addition, the Office Action indicates that claim 18 is rejected under 35 USC 102; however, the Office Action fails to give specific reasons for the rejection of claim 18. Furthermore, the Office Action acknowledges that Kohn does not teach abstraction-decomposition space techniques. Applicant assumes that the inclusion of claim 18 in the list of claims rejected under 35 USC 102 is merely a typo.

Examiner's response:

Examiner suggests that the Applicant review the First Office Action of April 11, 2002, page 6 para 4 wherein the Applicant can be informed of the basis of the Claim 18 rejection under 35 USC 103(a). Further, while the Applicant suggests that there is a

statement regarding Kohn not teaching "abstraction-decomposition space techniques" cited under 35 USC 102, pages 2-6, such is simply not the case.

In reference to Applicant's argument:

Claim 18 was rejected under 35 USC § 103(a) as being unpatentable over Kohn et al. in view of the Applicant's specification. In the "Response to Arguments" section, the Office Action indicated that the rejection from the "First Office Action" still applies. In particular, the Office Action stated that "[t]o one of ordinary skill in the art such as an engineer that is accustomed to solving problems, the combination of Kohn with APA is not elusive [and] for sure, artificial intelligence is cognitive work." Office Action at para 6.

Applicant traverses this rejection. As set forth in the prior response to the Office Action mailed on April 11, 2002, "[t]he Office Action must provide specific, objective evidence of record for a finding of a suggestion or motivation to combine reference teachings and must explain the reasoning by which the evidence is deemed to support such a finding. In re Sang Su Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Applicant respectfully submits that the remarks in the "Response to Arguments" section are conclusory such that the Office Action has not provided objective evidence for a suggestion or motivation to combine Kohn with the Applicant's specification (which is referred to by the Office Action as APA). Therefore, Applicant respectfully submits that the Office Action did not make out a prima facie case of obviousness for claim 18.

Examiner's response:

Para 2 above applies. Prior office actions apply. The Examiner's Response to the Applicant's arguments is provided primarily for clarification. The references in counter using prior art have been noted in detail as appropriate in prior office actions. As suggested above, the Applicant is encouraged to review page 7 of the First Office Action, dated April 11, 2002 at lines 4-7 for the statement of motivation.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1 –7, 9-17, and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohn et al (U. S. Patent 5,963,447).

Claim 1

Kohn anticipates annotating one or more actions in the production recipe with a desired intention for the action (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18, lines 44 – 45).

Claim 2

Kohn anticipates annotating the one or more actions with a desired state for the action (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18, lines 44 – 45; col 2, lines 38 – 40).

Claim 3

Kohn anticipates receiving knowledge from one or more sources (**Kohn**, col 18, lines 44 – 45); and generating through computer automated operations a recipe comprising a set of actions and the purpose of the underlying process (**Kohn**, col 1, lines 8 – 16; col 21, lines 40 – 43; col 4, lines 34 – 37).

Claim 4

Kohn anticipates modifying the recipe (**Kohn**, col 6, lines 14 – 17; col 21, lines 32 – 43).

Claim 5

Kohn anticipates the knowledge is received from a user (**Kohn**, col 18, lines 44 – 45).

Claim 6

Kohn anticipates receiving data from multiple knowledge sources (**Kohn**, col 18, lines 44 – 45; col 55, lines 34 – 36); storing the data in a structured knowledge repository (**Kohn**, col 55, lines 37 – 38); and modifying a recipe for a batch processing situation using the data stored in the knowledge repository, wherein the recipe contains steps and purposes (**Kohn**, col 53, lines 54-60).

Claim 7

Kohn anticipates modifying the recipe further comprises using inputs from a user (**Kohn**, col 18, lines 44 – 45; col 21, lines 32 – 43).

Claim 9

Kohn anticipates a Knowledge Builder to derive from multiple knowledge sources (**Kohn**, col 18, lines 44 – 45); a Structured Knowledge Repository to store and organize the knowledge, wherein the Structured Knowledge Repository organizes knowledge and provides links between specific pieces of information and the functional purposes to which the knowledge can be put (**Kohn**, col 19, lines 1-13); and a Decision Maker to use the knowledge stored in the structured knowledge repository to identify one or more modifications of recipe steps (**Kohn**, col 18, lines 64 – 67; col 19, lines 1 – 6).

Claim 10

Kohn anticipates the recipe is for a batch process (**Kohn**, col 1, lines 9 – 16).

Claim 11

Kohn anticipates Knowledge Builder is to extract knowledge from multiple sources through one or more Machine Learning techniques (**Kohn**, col 10, lines 54 – 57).

Claim 12

Kohn anticipates wherein the different Machine Learning techniques act independently from each other (**Kohn**, col 10, lines 54 – 57).

Claim 13

Kohn anticipates knowledge builder is scalable by adding additional the Machine Learning techniques (**Kohn**, col 2, lines 16 – 22).

Claim 14

Kohn anticipates explanation-based learning, memory based learning, situation-dependent learning (**Kohn**, col 1, lines 9 – 16).

Claim 15

Kohn anticipates the Knowledge Builder is to receive feedback from a user (**Kohn**, col 18, lines 44 – 45; col 1, lines 9 – 16).

Claim 16

Kohn anticipates the knowledge builder is scalable to incorporate new knowledge (**Kohn**, col 19, lines 7 – 13; col 2, lines 16 – 22).

Claim 17

Kohn anticipates the knowledge builder is scalable to incorporate new knowledge extraction techniques (**Kohn**, col 19, lines 7 – 13; col 2, lines 16 – 22).

Claim 19

Kohn anticipates the Structured Knowledge Repository organizes knowledge and provides links between specific pieces of information and the functional purposes to which the knowledge can be put (**Kohn**, col 18, lines 54 – 59; col 20, lines 10 – 24).

Claim 20

Kohn anticipates the Decision Maker is to assemble the knowledge into an answer to a query (**Kohn**, col 18, lines 65 – 67; col 19, lines 1 – 6).

Claim 21

Kohn anticipates the answer to the query is in the form of a recipe modification that meets desired goals and constraints (**Kohn**, col 18, lines 65 – 67; col 19, lines 1 – 6).

Claim 22

Kohn anticipates the Decision Maker is to display knowledge to a user (**Kohn**, col 1, lines 11 – 15).

Claim 23

Kohn anticipates receiving one or more desired purposes for the production process; receiving a recipe (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18, lines 44 – 45); and generating an advanced recipe comprising a set of actions and the purpose of the underlying process (**Kohn**, col 1, lines 8 – 16; col 21, lines 40 – 43; col 4, lines 34 – 37).

Claim 24

Kohn anticipates the method further comprises modifying the advanced recipe in response to a user (**Kohn**, col 18, lines 44 – 45; col 21, lines 32 – 43).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohn et al in view of Acknowledged Prior Art (U. S. Patent 5,963,447, referred to as **Kohn**; Specification, referred to as Acknowledged Prior Art, **APA**).

Claim 18

Kohn does not teach structured knowledge repository uses abstraction-decomposition space (ADS) techniques. However, APA does teach structured knowledge repository uses abstraction-decomposition space (ADS) techniques (**APA**, page 12, lines 6 – 30; page 13, lines 1 – 6). It would have been obvious of one of ordinary skill in the art at the time of the invention to use the teachings of APA to satisfy analysis requirements as set forth in a learning environment to achieve goal setting functionality.

Conclusion

12. Claims 25-28 and 33-36 are allowed. Claims 1-7, 9-18, 20-24 and 29-32 are rejected.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anil Khatri can be reached at (703) 305-0282.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Hand-delivered responses should be brought to:

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Joseph P. Hirl



July 21, 2003



ANIL KHATRI
PRIMARY EXAMINER